

LPC# 0316585224 Cook County
Chicago Smelting and Refining
ILN 000 510 825
SF/HRS

Abbreviated Preliminary Assessment



Prepared by:
Office of Site Evaluation
Division of Remediation Management
Bureau of Land

SIGNATURE PAGE

Title: CERCLA Preliminary Assessment for Chicago Smelting

Preparer: Dave Reed, Project Manager, Office of Site Evaluation, Illinois
Environmental Protection Agency

Dave Reed
Signature

3/14/13
Date

Approval: Erica Aultz, Site Assessment Manager, United States Environmental
Protection Agency, Region 5

Erica Aultz
Signature

3/13/13
Date

*The approval signatures on this page indicate that this document has been authorized for
information release to the public through appropriate channels. No other forms or signatures
are required to document this information release.*

Abbreviated Preliminary Assessment

for:

CHICAGO SMELTING & REFINING CO.

CHICAGO, ILLINOIS

ILN # 000510825

PREPARED BY:

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

BUREAU OF LAND

DIVISION OF REMEDIATION MANAGEMENT

OFFICE OF SITE EVALUATION

December 6, 2012

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Section 1.0 Introduction

On June 29, 2012, the Illinois Environmental Protection Agency's (Illinois EPA) Office of Site Evaluation was tasked by the Region 5 Offices of the United States Environmental Protection Agency (U.S. EPA) Region 5 to conduct an Abbreviated Preliminary Assessment on Chicago Smelting and Refining in Chicago, Cook County (ILN 000510825), Illinois. The coordinates of the site are at 41.82571° latitude and -87.70449° longitude.

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 CFR Part 300) requires that a Preliminary Assessment be performed on all sites entered into the Comprehensive Environmental Response, Compensation, and Liability System (CERCLIS), U.S. EPA's inventory of hazardous waste sites.

The Abbreviated Preliminary Assessment can often determine whether a site should proceed through the Superfund process or be removed altogether with less information than is required for a conventional Preliminary Assessment. The Abbreviated Preliminary Assessment uses the same information as a conventional Preliminary Assessment but relies on best professional judgment to make decisions about a site at earlier stages in the process.

If the findings of the Abbreviated Preliminary Assessment determine that further investigation is necessary, the site will continue to progress through the Superfund process and receive a Site Inspection. A Site Inspection will evaluate the extent that a site presents a threat to human health and/or the environment. This may be accomplished by collecting and analyzing wastes and environmental media samples to determine whether hazardous substances are present at the site and are migrating to the surrounding environment. The Site Inspection will provide necessary information that will determine if the site qualifies for

possible inclusion on the National Priorities List (NPL) or should have No Further Remedial Action Planned (NFRAP). At any time throughout the Superfund evaluation process, the site may be NFRAP, be referred to another state or federal clean-up program, or recommended for further action. The Abbreviated Preliminary Assessment is performed under the authority of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) commonly known as Superfund.

Section 2.0 Site Background

2.1 Site Description

The Chicago Smelting & Refining Company property located at 3701 South Kedzie Avenue, Chicago, Illinois, has been identified as a former smelting operation and a potential hazardous materials site. This address is located in an industrial area two blocks south of the Interstate-55 & Kedzie interchange. The 1.17 acre property is bordered by South Kedzie Avenue on the west; AMTRAK/Illinois Central railroad tracks on the north; South Albany Avenue on the east and West 37th Place on the south. The property is fenced with restricted access and is located in an industrial/commercial area. The property is currently used primarily for parking commercial vehicles, and also has a 5000 square foot building on the lot.

The topography of the area is primarily flat with excess surface water channeled toward storm sewers which are located on all of the major surrounding streets. The parking lot is paved and there is very little soil exposed around the building. The adjacent areas are sparsely

populated, with the nearest private residences located approximately 400 feet south of the property.

2.2 Site History

There was no listing for Chicago Smelting and Refining at the 3701 South Kedzie Avenue address in the Standard Metals Directories from 1940. The 1946, 1948, and 1954 Standard Metals Directory listed Chicago Smelting & Refining as a metal smelter and refinery producing solder, babbitt, lead, tin, zinc and type metal as well as a zinc smelter and dealer of scrap metals.

Sanborn Fire Insurance Maps (Sanborns) from 1919 through 1940 do not indicate the presence of Chicago Smelting and Refining at the 3701 South Kedzie Avenue address. During that period, the Sanborns just showed the lot as a vacant area. The immediate area to the south and east of the site in 1919 was mainly occupied by residential dwellings. A copy of the 1919 Sanborn can be found in Figure 4.

The Sanborn from 1951 does confirm that the building located at 3701 South Kedzie Avenue was used for Chicago Smelting and Refining. An illustration of the 1951 Sanborn map can be found in Figure 4.

There was no listing for Chicago Smelting and Refining at the 3701 South Kedzie Avenue address in the Standard Metals Directories from 1968. Sanborns from that period were not available. The current use of the property is as a parking lot. The lot is approximately 1.17 acres in area and is located in a light industrial area.

2.3 Regulatory Status

Based upon available file information the Chicago Smelting Site does not appear to be subject to Resource Conservation and Recovery Act (RCRA) corrective action authorities.

Information currently available does not indicate that the site is under the authority of the Atomic Energy (AEA), Uranium Mine Tailings Action (UMTRCA), or the Federal Insecticide Fungicide or Rodenticide Act (FIFRA). When the site was operating, the site had an air permit.

Section 3.0 Field Inspection Activities

3.1 Field Inspection

Personnel of the Office of Site Evaluation (OSE) of the Illinois Environmental Protection Agency (IEPA) conducted a CERCLA site reconnaissance was on July 19, 2012. A site reconnaissance of the former Chicago Smelting and Refining Company property and the surrounding area was conducted to determine the physical property boundaries and survey the properties at its perimeters. The survey of the surrounding area was done to determine land usage of the neighboring properties as well as any pathway or receptors that potentially may be affected by the site. As mentioned, the site was observed to be flat, with very little of the ground left uncovered. The majority of the surrounding area is residential and covered with buildings and concrete sidewalks.

3.2 Analytical Data

One of the purposes of the site reconnaissance and investigation, conducted by personnel of the IEPA Office of Site Evaluation on July 19, 2012, was to collect field based soil data with an Innov-X X-Ray Fluorescence (XRF) unit. A variety of inorganic analytes can be detected through use of the XRF. The analyte of concern at this location was lead due to the former operation of the lead smelter. The analysis was completed in situ on soil at residential right-of-way locations in proximity to the site at 3701 South Kedzie. Four soil locations were analyzed with the XRF (indicated below as XRF Readings 2-11) at multiple depths for each location. The readings produced lead levels ranging from 18 to 373ppm and zinc levels ranging from 69 to 548ppm, which are below established Tiered Approach to Corrective Action Objective (TACO) levels for residential properties in the Chicago area. The lead and zinc levels were not detected above any health-based or other criteria that may warrant any removal or remedial actions. The results will be shared with the Illinois Department of Public Health (IDPH) for their interpretation.

Section 4.0 Potential Sources

The Chicago Smelting and Refining was listed in the Standard Metal Directories as a metal smelter and refinery producing solder, babbitt, lead, tin, zinc and type metal as well as a zinc smelter and dealer of scrap metals. Based upon the historic types of activities that took place on 3701 South Kedzie, inorganic soil contamination may have resulted.

Although past site activities may have contributed to soil contamination in the immediate area, the soil surrounding the residential area does not appear stressed and is well vegetated. The construction of the houses, sidewalks, and roads in the area has resulted in the redistribution of soil in the immediate area. It is unclear if the soil that is currently located at or near 3701 South Kedzie is the same surface soil that has been there since the operation of Chicago Smelting and Refining.

Based upon the results of the XRF samples, and the fact that most of the soil surface is well vegetated, it appears that the shallow soil in the vicinity of the apartment complex has not been adversely impacted by past site activities. For those reasons, contaminated soil will not be considered a source of contamination for the Chicago Smelting and Refining site.

Section 5.0 Pathway Discussions

5.1 Groundwater

There were no groundwater wells located within the area of the Chicago Smelting and Refining site when an internal file search was conducted on the property and surrounding area. The City of Chicago supplies drinking water to the residents of the area through surface water intakes located in Lake Michigan which are over five miles from the Chicago Smelting and Refining property.

There were no groundwater samples collected during the Abbreviated Preliminary Assessment. Due to fact that groundwater is not being used for drinking, it was determined not to be a concern at this time.

5.2 Surface Water

The surface water runoff from this property accumulates from building roof drains and excess moisture runoff from the soil, asphalt, concrete sidewalks and roadways. The surface water runoff route is via city streets where street curb and gutter systems direct flow into storm drains and into the City of Chicago sewer system.

There were no surface water or sediment samples collected during the Abbreviated Preliminary Assessment. There are no creeks, rivers, or streams located within the proximity of Chicago Smelting and Refining property. Due to fact that most of the surface water is collected into the City of Chicago's sewer system, surface water and sediment samples were determined not to be a concern at this time.

5.3 Soil Exposure

Based upon information gathered during the June 29, 2012 Pre-CERCLIS Screening Assessment, the soil exposure pathway associated with the former Chicago Smelting and Refining Company facility does not appear to be a primary concern. The facility is located in an urban setting of mixed light industrial and residential properties. With numerous other industrial entities in the surrounding area, singling out this particular facility as a contaminant source is beyond the scope of this assessment. A majority of the site itself is covered with the industrial buildings, sidewalks, parking lots, and roadways. Based on the intent and limited

scope of work of the Abbreviated Preliminary Assessment, residential and other industrial properties within one-quarter mile of the former facility were not thoroughly evaluated during this investigation. Limited XRF readings at local residences were collected.

Using U.S. Geological Survey topographical maps and U.S. Census data from 2010, approximately 32,493 people reside within 1-mile of the Chicago Smelting and Refining site. A map illustrating the site with 4-mile rings can be found as a figure to the Abbreviated Preliminary Assessment. There are no schools or daycare facilities located within 200 feet of the Chicago Smelting and Refining site.

Nearby Illinois population within one-mile of the site

Distance (mi)	Population
0 – ¼ mile	2,520
¼ – ½ mile	6,176
½ - 1 mile	23,797
Total	32,493

The number of people was calculated using 2.63 people per household in Cook County, established by the U. S. Census Bureau and ARCVIEW population calculations

5.4 Air Route

During the July 19, 2012 reconnaissance and investigation, no odors emanating from the site were noticed. No formal air samples were taken during the Abbreviated Preliminary Assessment at the Chicago Smelting and Refining site. As mentioned previously, the facility has various types of site cover on most of the property which limits airborne migration of windblown particulates. Landscaping on the property does allow the possibility of airborne

migration of windblown particulates. However, due to the site characteristics, XRF results, and surrounding environment, the potential for airborne particulates to be released via the air pathway is present, but not considered to be hazardous to human health or the environment.

Using U.S. Geological Survey topographical maps and U.S. Census data from 2010, approximately 661,352 people reside within four miles of the Chicago Smelting and Refining site. A map illustrating the site with 4-mile distance rings can be found as an attachment to the Abbreviated Preliminary Assessment Report.

Illinois population within four-miles of the site

Distance (mi)	Population
0 – ¼ mile	2,520
¼ - ½ mile	6,176
½ - 1 mile	23,797
1 – 2 miles	148,070
2 – 3 miles	210,308
3 – 4 miles	270,481
Total	661,352

The number of people was calculated using 2.63 people per household in Cook County, established by the U. S. Census Bureau and ARCVIEW population calculations

Section 6.0 Summary

Based upon Sanborn Fire Insurance Maps and the Standard Metals Directories, the Chicago Smelting and Refining facility located at 3701 South Kedzie was a metal smelter, a metal refinery, and a dealer of scrap metals. The former location is in a mixed industrial/commercial area with a residential area to the south.

As part of the Abbreviated Preliminary Assessment, X-Ray Fluorescence (XRF) scans were performed at residential locations in proximity to the site at 3701 South Kedzie. The samples were collected in order to determine if nearby residents could be exposed to possible inorganic constituents that may have been present due to historic activities at Chicago Smelting and Refining.

The readings produced lead levels ranging from 18 to 373 ppm and zinc levels ranging from 69 to 548ppm, which are normal results in the Chicago area and give no cause for concern or further investigation. The current condition of the property poses little to no risk for human exposure, as the property is covered in asphalt/gravel and any access to the property is blocked from the public by a gate and barbed wire fence.

Illinois EPA will be sharing the completed Abbreviated Preliminary Assessment Report, including the XRF data, with the Illinois Department of Public Health. The Illinois Department of Public Health will conduct a health assessment based on that information.

Section 7.0 References

Cook County Assessor's Office, <http://www.cookcountyassessor.com/filings/gis.asp>

Illinois Environmental Protection Agency, <http://www.epa.state.il.us>

Standard Metal Directory, Eighth Edition 1940, Atlas Publishing Company, 150 Lafayette St., New York, Copyright 1939.

Standard Metal Directory, Eleventh Edition 1948, Bardeen Press, Inc., Atlas Publishing Company, Copyright 1948.

Standard Metal Directory, 1963-1964 Volume XVII, by Geoffrey J. Nightingale, Copyright 1963, by Standard Metal Directory 525 W. 42nd St., New York 36, N.Y.

U.S. EPA, <http://www.epa.gov/superfund/sites/cursites/index.htm>

Figure - 1

Figure 1
SITE LOCATION MAP

Chicago Smelting and Refining
Cook County
Chicago, Illinois

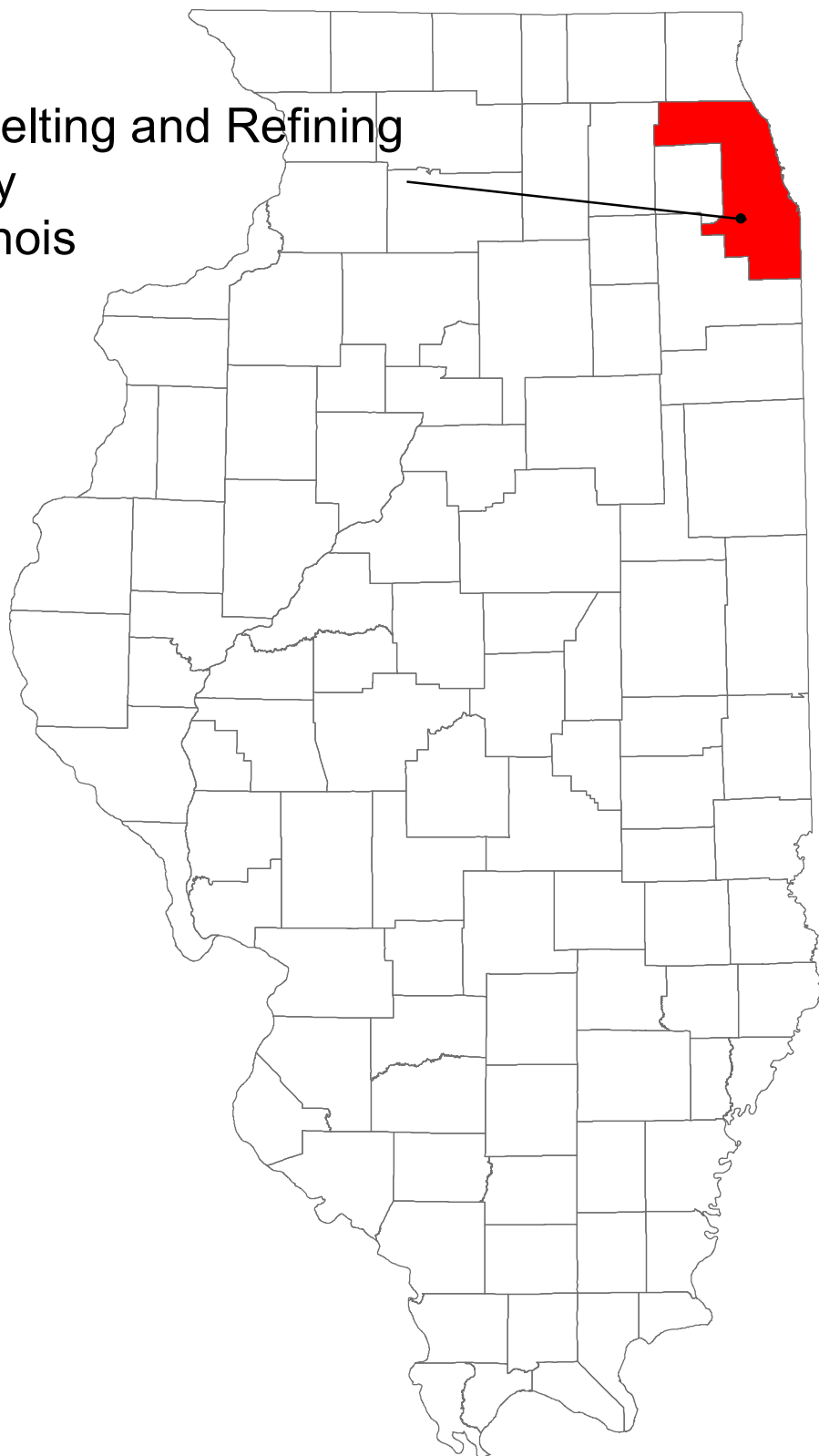


Figure - 2

Figure 2

Chicago Smelting and Refining Topographical Map

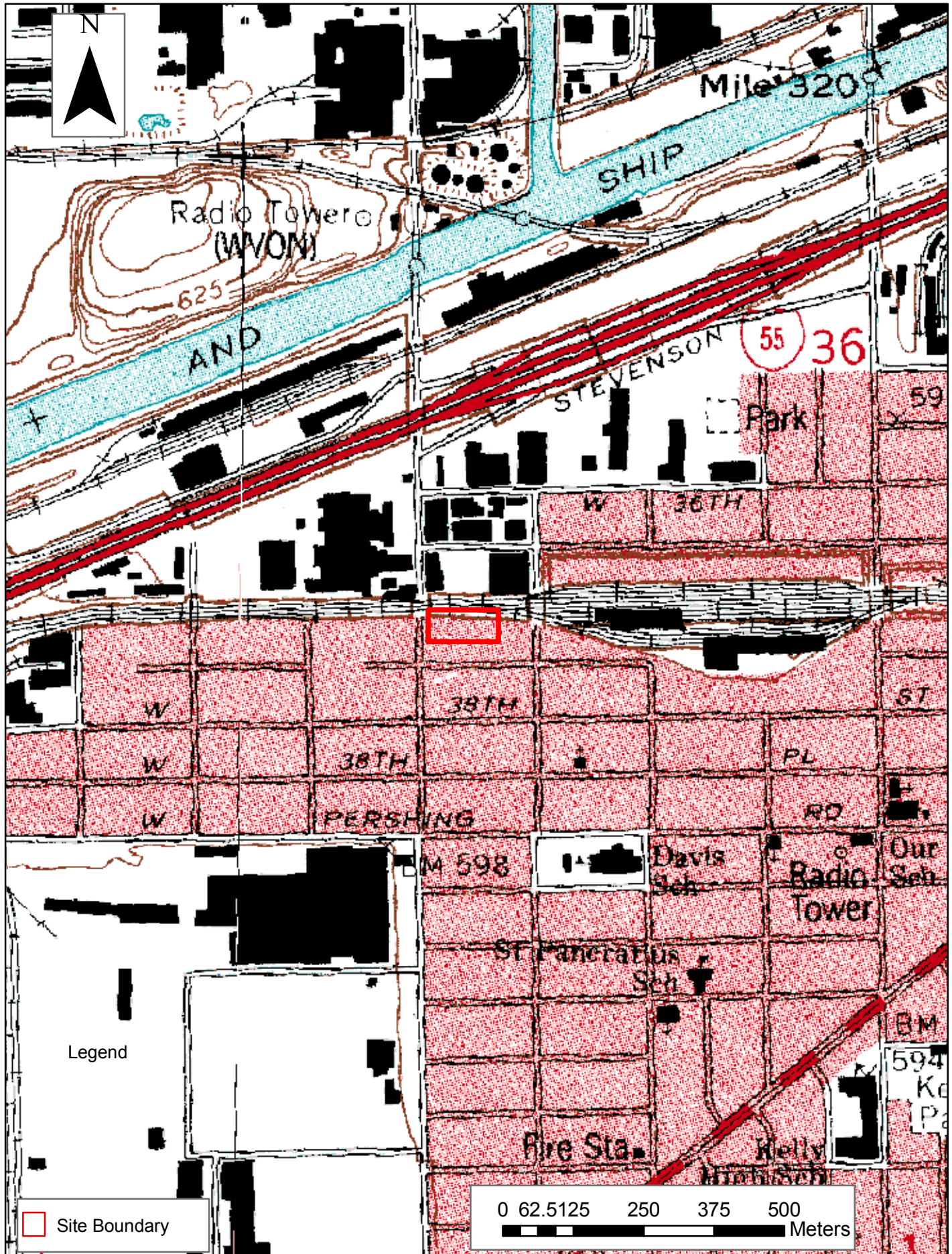


Figure - 3

Figure 3
XRF Sample Location Map



Figure - 4

1919

CHRONOLOGICAL

47
(13-14)

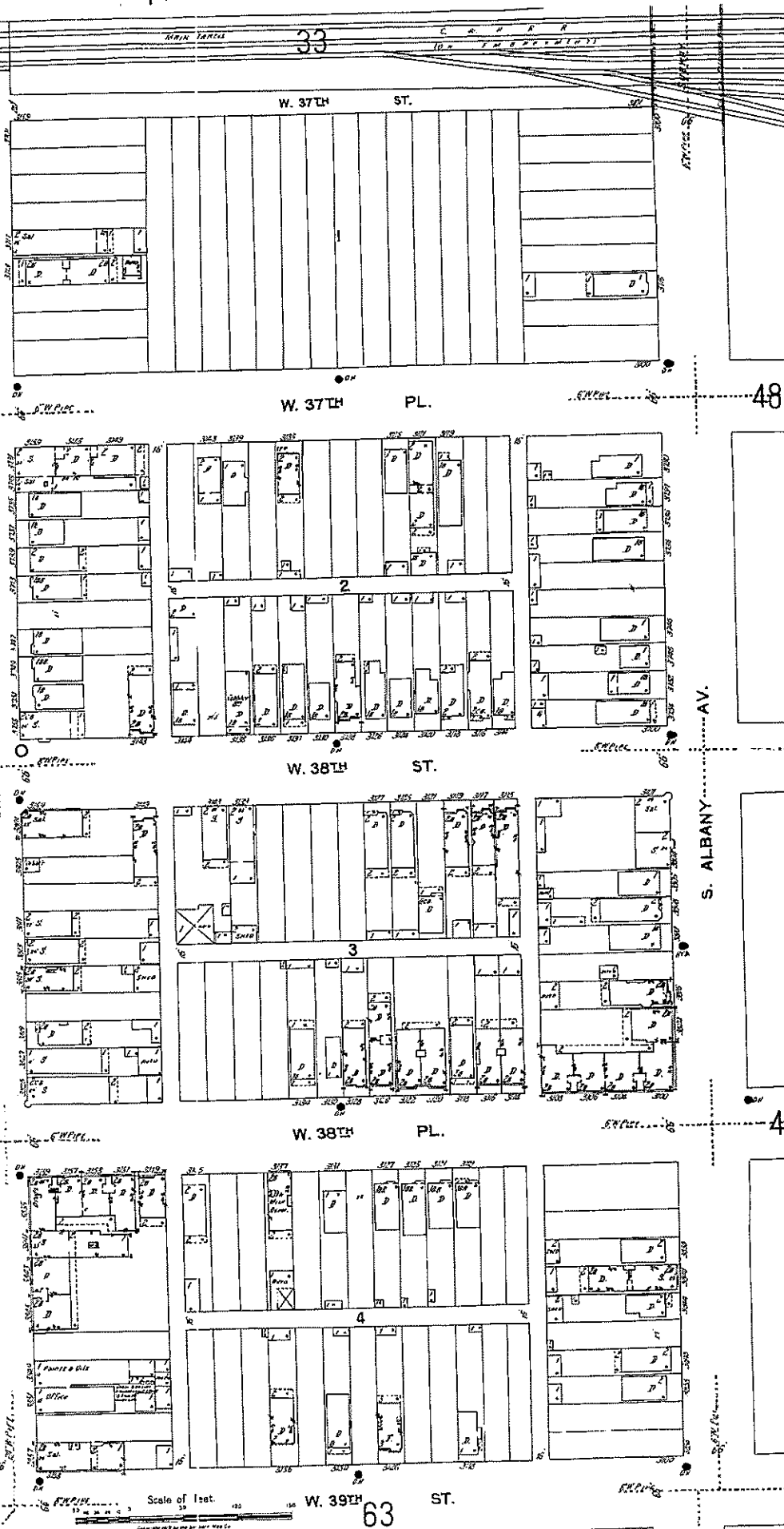


46

S. KEDZIE AV.

46

S. ALBANY AV.



33

W. 37TH ST.

W. 37TH PL.

W. 38TH ST.

W. 38TH PL.

W. 39TH ST.

63

48

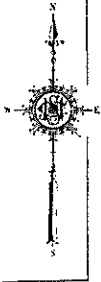
48

Scale of 1st.

100 200 300 400 500 600 700 800 900 1000

1950 1951

CHICAGO PLAZA
47
(13-14)



46

S. KEDZIE AV.

W. 37TH ST.
PL.

48

W. 38TH ST.

W. 38TH PL.

S. ALBANY AV.

46

48

47

Scale of Feet W. PERSHING (W. 39TH ST) ROAD

63

Figure - 5

Chicago Smelting & Refining 4-Mile Radius Map

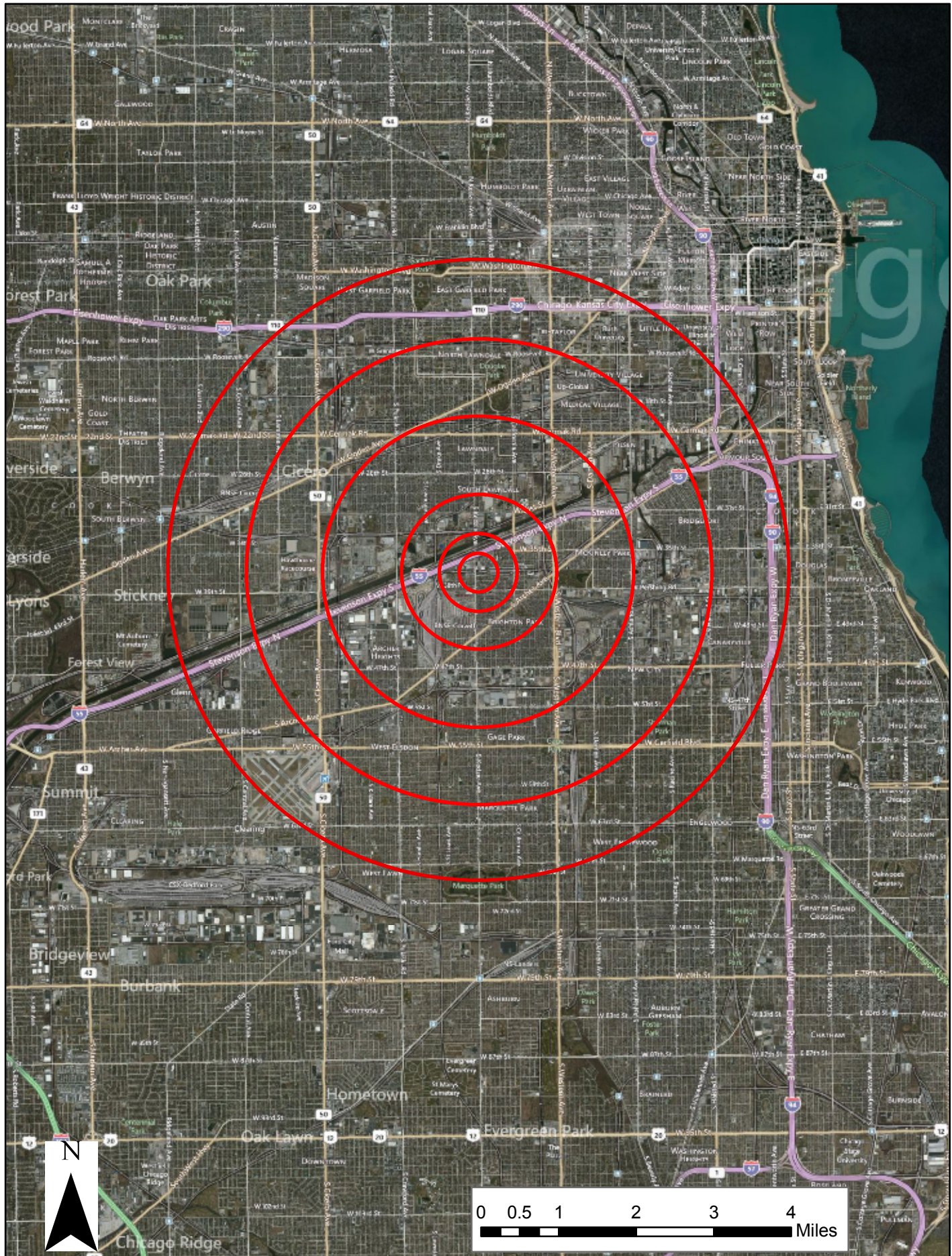


Figure - 6

NATIONAL LEAD COMPANY



LEAD

Sheet Lead Lead Pipe
Lead Alloys Lead Wool
Lead Tubing Lead Wire
Lead Traps and Bends
Tellurium Lead

BABBITT METAL BATTERY METAL
TYPE METAL CASTING METAL
SOLDER

Branch addresses: National Lead Company, New York, Baltimore, Buffalo, Chicago, Cincinnati, Cleveland, St. Louis; National-Boston Lead Co., Boston; John T. Lewis & Bros. Co., Philadelphia; National Lead & Oil Co., Pittsburgh; Georgia Lead Works, Atlanta; American Lead Corporation, Indianapolis; Morris P. Kirk & Son, Inc., Los Angeles; Master Metals, Inc., Cleveland; The Canada Metal Company, Ltd., Toronto, Montreal, Winnipeg, Vancouver.

STANDARD METAL DIRECTORY

EIGHTH EDITION

1940

PRICE TEN DOLLARS

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Sweats—Percentage Metal, Pig Solder, Hard Lead

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Type and Lead

METALS:

Tin—Pewter—Babbitt—Solder—Joints
Type Metals and All Metal Residues

ZINC AND DIE CAST

Louis Lapidès, Pres.; G. J. Gorman, Jr., Sales Mgr.; W. L. McEwen, P.A.
PRODUCTS: Aluminum ingot, pig lead, spelter, die cast, babbitt, solder.
CONSUME: All grades of virgin and scrap metals.

Lapides Metals Corp.
PRODUCTS: Aluminum ingots, babbitt and solder, slab zinc, etc.
CONSUME: All grades of scrap metal.

DELAWARE WILMINGTON

Metallurgical Products Co.
(See Philadelphia, Pa.)

GEORGIA ATLANTA

Evans Metal Co., P.O. Box 97.
Inc. 1937. Cap. \$75,000. C. F. Evans, Pres.
PRODUCTS: Babbitt, solder, etc.

Georgia Lead Co., (Sub. of National Lead Co., New York.), Bishop & Mecushin Sts.
EQUIPMENT: Reverberatory blast furnaces.
PRODUCTS: Lead pipe, metals, etc.

Seitzinger's Sons, Thos. F., 900 N. Ashby St., N. W.
EQUIPMENT: Coke and oil furnaces.
PRODUCTS: Brass & bronze castings, babbitt, type metals, pig and antimonial lead, spelter, solders.
CONSUME: Virgin and scrap metals.

IDAHO KELOGG

Bunker Hill Smelter
A. F. Beasley, Supt.
Smelter near Kellogg at Bradley.
Property of the Bunker Hill & Sullivan M. & C. Co.
EQUIPMENT: Blast furnace, lead producing furnaces, etc.
PRODUCTS: Lead, zinc, gold, silver, etc.

Sullivan Mining Co.
(Controlled jointly by Bunker Hill & Sullivan M. & C. Co., and Hecla Mng. Co.)
Smelter near Kellogg at Silver King.
PRODUCTS: Electrolytic slab zinc, etc.

ILLINOIS AURORA

Aurora Metal Co.,
EQUIPMENT: 15 crucible furnaces.
PRODUCTS: Babbitt metal, die castings, metallic packing, etc.
CONSUME: Virgin metals. Ingots. Scrap metals.

Aurora Refining Co.
B. W. Randolph, Pres.
PRODUCTS: Aluminum ingots and alloys.
CONSUME: Scrap: Aluminum cable and wire, cast aluminum, sheet aluminum, aluminum clippings, borings and drosses.

Jobbins, Inc., Wm. F.
Inc. 1907. Cap. \$500,000. F. Hedley Jobbins, Pres.; W. A. McKnight, Sales Mgr. & P.A.

ILLINOIS

AURORA (Con.)

EQUIPMENT: O.H. furnaces. Employ 75.
PRODUCTS: Secondary aluminum ingots.
CONSUME: Virgin metals. Aluminum ingots.
Scrap: All grades of aluminum.

BECKEMEYER

Federated Metals Div. of American Smelting & Refining Co.
E. W. Thornley, P.A.
EQUIPMENT: Belgian furnaces. Employ 96.
PRODUCTS: Prime Western zinc, zinc anodes, slab zinc.
(Gen. Offices, New York, N. Y.)

CHICAGO

Apex Smelting Co., 2537 W. Taylor St.
Inc. 1923. W. A. Singer, Pres.; R. L. Brown, Sales Mgr.; A. O. Anderson, P.A.
PRODUCTS: Aluminum & aluminum alloys, zinc base alloys, ferro-alloys. Employ 110.
CONSUME: Virgin aluminum, electrolytic copper, shot, ingot & electrolytic nickel, high grade zinc. Magnesium scrap: Crucible copper, No. 1 copper wire, heavy copper, yellow brass pipe & tubing, all grades of aluminum.

Blatchford Co., E. W., 900 W. 18th St. (Sub. of National Lead Co., New York.)
PRODUCTS: Type metals.

Bryant Mfg. Co., 401 N. Paulina St.
Inc. 197.8 Cap. \$10,000. Louis Birkenstein, Pres. & P.A.
PRODUCTS: Battery zincs, etc.
CONSUME: Electrolytic copper, prime Western zinc. Ingots and pig metals. Scrap metals.

Chicago Smelting & Refining Corp., 2457 Loomis St.
H. Feinberg, Pres. & P.A.; Elmer E. Fisher, Sales Mgr.
EQUIPMENT: Reverberatory furnaces.
PRODUCTS: Solder, babbitt, lead, tin, zinc and type metals in all shapes and forms.
CONSUME: New metals. Scrap: All grades white metals.

Cohen & Co., L. S., 1111 Liberty St.
Brass and copper smelters.

Cohn & Bros., Inc., L. A., 5429 W. Roosevelt Rd.
L. A. Cohn, Pres.
PRODUCTS: Copper, bronze and aluminum ingots, babbitt, type metals, solder.
CONSUME: All grades of scrap metals.

Division Lead Co., 836 W. Kinzie St.
Est. 1918. Ben Stone, Pres.; T. S. Stone, Asst. P.A.
EQUIPMENT: Reverberatory furnace. Employ 30.
PRODUCTS: Lead pipe, solder, lead products, babbitt metals, tin products, type metals. Annual cap. 6,000,000 lbs.
CONSUME: Virgin metals. Scrap: White metals.

Gardiner Metal Co., 2514 W. 48th Pl.
R. A. Gardiner, Sr., Pres.
EQUIPMENT: Blast furnace. Employ 90.
PRODUCTS: White metal alloys.
CONSUME: Virgin aluminum, antimony, copper, lead, tin. Bearing plate metal. Scrap: White metals.

General Chemical Co., 105 W. Madison St.
PRODUCTS: Chemicals, etc.
CONSUME: Zinc skimmings, drosses and ashes.

Goldsmith Bros. Smelting & Refining Co., 58 E. Washington St.
Plants: Chicago, Ill., and New York, N. Y.
S. Goldsmith, Pres.; M. S. Goldsmith, Gen. Mgr.
EQUIPMENT: Blast furnace, 5 reverberatory furnaces, 4 cupolas.
PRODUCTS: Soft and corroding lead, antimonial lead, antimonial tin lead, mercury, all precious metals and their salts.
CONSUME: Virgin lead. Battery plate metal. Scrap: Stove plate, mill cinder. Battery plates, soft and hard lead lead, drosses & slags, lead pipe.

Illinois Smelting & Refining Co., 3710 S. California Ave.
PRODUCTS: Spelter, lead, copper, brass and aluminum ingots, babbitt, type metal, solders, etc.
CONSUME: New and scrap metals.

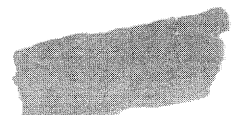
Illinois Zinc Co., 2959 W. 47th St.
Plants: Peru, Ill., and Dumas, Tex.
J. A. Hill, Pres.; L. E. Nelson, Vice Pres. & Sales Mgr.; J. Taylor, P.A.
PRODUCTS: Slab zinc, ceremite, sulphuric acid, etc.
CONSUME: Virgin zinc. Babbitt metal.

Imperial Smelting Corp., 4442 W. Fillmore I. Lippa, Pres. & P.A.
PRODUCTS: Babbitt, solder, type and die cast metal.
CONSUME: Scrap: All grades of white metals, bell metal, die cast scrap, monel metal clippings, castings & turnings, old nickel anodes, nickel clippings & wire.

Inland Metals Refining Co., 4857 S. May St.
Plants: Chicago, Ill., and East Chicago, Ind.
Inc. 1939. Cap. \$25,000. Jay Kaplan, Pres. & P.A.; D. A. Jackson, P.A.
EQUIPMENT: Reverberatory furnace, 8 melting kettles.
PRODUCTS: Slab zinc. Pig lead, bar solder and all grades of anti-friction alloys. Annual cap. 5,000 tons.
CONSUME: High grade zinc. Ingots and pig metals. Scrap metals.

Kester Solder Co., 4201 Wrightwood Ave.
Plants: Chicago, Ill.; Newark, N. J.; Brantford, Ont., Can.
F. C. Engelhart, Pres.; P. C. Ripley, Gen. Sales Mgr.; G. E. Fischer, P.A.
PRODUCTS: Self-fluxing solders, soldering fluxes, solid wire, bar, radiator, body and aluminum solders.
CONSUME: Desilverized lead, Straits tin.

Kramer & Co., H., 21st & Loomis Sts.
Cap. \$75,000. J. Kaden, Pres. & Treas.; L. Chapman, Exec. Vice Pres.; N. F. Kepner, P.A. of metals; A. M. Shefcik, P.A. of fdy. supplies.
EQUIPMENT: 6 reverberatory, 4 crucible, 4 kettle and 1 rotary furnace. Employ 150.
PRODUCTS: Red brass ingots; manganese bronze, phos. bronze; yellow brass ingots, aluminum ingots, nickel silver ingots. Annual cap. 50,000,000 lbs.
CONSUME: Virgin lead, copper, tin, zinc, antimony. All grades of scrap metals, phos. copper ingot. Ferro-alloys.



NATIONAL LEAD COMPANY



LEAD

SHEET LEAD
LEAD ALLOYS
LEAD TUBING

LEAD PIPE
LEAD WOOL
LEAD WIRE

Lead Traps and Bends
Tellurium Lead

BABBITT METAL
TYPE METAL

BATTERY METAL
CASTING METAL
SOLDER

Branch addresses: National Lead Company, New York, Baltimore, Buffalo, Chicago, Cincinnati, Cleveland, St. Louis; National-Boston Lead Co., Boston; John T. Lewis & Bros. Co., Philadelphia; National Lead & Oil Co., Pittsburgh; Georgia Lead Works, Atlanta; American Lead Corporation, Indianapolis; Morris P. Kirk & Son, Inc., Los Angeles; Master Metals, Inc., Cleveland; The Canada Metal Company, Ltd., Toronto, Montreal, Winnipeg, Vancouver.

STANDARD METAL DIRECTORY

TENTH EDITION

1946

PRICE TEN DOLLARS

Compiled and Published Since 1915

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"A Good Name Carries Weight"

MONROE 3400

Division Lead Co.

DIVCO

836 W. KINZIE ST. • CHICAGO 22, ILL.



DIVCO
PRODUCTS

ACID CORE SOLDER
All grades and gauges

ANODES
Of all metals

BABBITT METALS
All Grades

FLUX CORE SOLDER
For special applications

FOIL
Lead - Solder - Tin

FUSIBLE ALLOYS
All Melting Points

LEAD
All Shapes and Forms

ROSIN CORE SOLDER
All grades and gauges

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CHICAGO (Con.)

Gardiner Metal Co., 4820 S. Campbell Ave. (32)
Goldsmith Bros. Smelting & Refining Co., 58 E. Washington (2)
Illinois Smelting & Refining Co., 3710 S. California Ave. (32)
Imperial Smelting Corp., 4440 W. Fillmore St. (24)
International Smelting & Refining Co., 20 N. Wacker Drive (6)
Kester Solder Co., 4201 Wrightwood Ave.
Kramer, H., & Co., 1343 W. 21st (8)
Liberty Smelting & Refining Co., 1925 N. Mendell (22)
Loewenthal Metals Corp., 947 W. Cullerton St. (8)
Metals Recovery Co., 2026 W. Carroll Ave. (12)
Michigan Smelting & Refining Co., 400 N. Michigan Ave. (11)
Midland Smelting Co., 1424 N. Halsted St. (22)
National Lead Co., 900 W. 18th (8)
National Metal Co., 1724 W. Lake (12)
Seligman, M. & Co., 1951 Clybourn Ave. (14)
Silverstein & Pinsof, 1720 Elston Ave. (22)
Smith & Robinson, 420 Orleans (10)
United American Metals Corp. of Ill., 2246 W. Hubbard St. (12)
Western Metal Co., 3201 S. Kedzie Ave. (23)

CHICAGO HEIGHTS

Harris, Benj. & Co., 11th & State Sts.

EAST ST. LOUIS

Lewin Metals Div. Lewin-Mathes Co. (Mon-santo P. O.)

INDIANA

EAST CHICAGO

Inland Metals Refining Co., 3601 Canal St.
International Smelting & Refining Co. (Lead)
U. S. Reduction Co., Melville & Chicago Ave.
U. S. S. Lead Refinery, Inc.

HAMMOND

Hammond Lead Products Co.
Metals Refining Co., Div. of the Glidden Co.

INDIANAPOLIS

American Lead Corp. (Sub. of Nat'l Lead Co.) 1609 E. 21st

SOUTH BEND

South Bend Smelting & Refining Co., 1610 Circle Ave.

WHITING

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ARKANSAS

JONESBORO

Arkansas Metals Co.

CALIFORNIA

LOS ANGELES

Berg Metal Corp., 2652 Long Beach Ave. (11)
Eastern Smelting & Refining Co., 2200 E.
11th (21)
Electric Babbitt Metals Co., 739 N. Main
Federated Metals Div. American Smelting &
Refining Co., 4010 E. 26th St.
Kirk, Morris P. & Sons, Inc., 2717 S. In-
diana
Los Angeles Smelting Co., 739 N. Main (12)
United American Metals Corp. of Calif., 2448
E. 25th St. (11)

OAKLAND

Bercovich, A. Co., 127 2nd
Globe Metals Co., 1820 10th St.
Sunset Smelting & Refining Co., 1639 18th

SAN FRANCISCO

Berg Metals Corp., 1200 Minnesota St. (7)
Bondrat Metals Corp., 23rd & Minnesota
Federated Metals Div. American Smelting &
Refining Co., 1901 Army
Finn, John, Metal Works, 384 2nd
Magnolia Metal Co., 660 3rd
United American Metals Corp. of California,
785 Bryant St. (7)

SELBY

Federated Div. American Smelting & Refin-
ing Co.

TORRANCE

Pacific Smelting Co., 2219 Western Ave.

COLORADO

DENVER

National Smelting & Refining Co., 1351 13th
Peerless Alloy Co., 1445 Osage

CONNECTICUT

HAMDEN

Hamden Smelting Co., Inc., 30 Edmund St.

NEW HAVEN

Lapides Metal Corp., 322 Legion Ave. (6)

WATERBURY

Infeld Metals Co., The, Falls Ave. (Nickel)

DISTRICT OF COLUMBIA

WASHINGTON

Viener, Hyman & Sons, L. & Colfax,
N. E. (2)

FLORIDA

JACKSONVILLE

Florida Smelting Corp., 2726 Evergreen
Ave. (6)

GEORGIA

ATLANTA

Miller Metals Co., 73 Mills St., S. W.
Seitzinger's, Thos. F., Sons, 900 Ashby St.,
N. W. (1)

ILLINOIS

AURORA

Aurora Refining Co.

BECKEMEYER

Federated Metals Div. American Smelting &
Refining Co.

CHICAGO

Ace Metal Co., 4500 W. Fillmore St. (24)
American Metal Co. of Ill., Ltd., 1 N. La-
Salle (2)
Braman, Chas. & Sons, 2046 W. Carroll
Ave. (12)
Century Smelting & Refining Corp., 2135 S.
Loomis (8)
Chicago Smelting & Refining Corp., 3701 S.
Kedzie Ave. (32)
Cohn, H. & Sons, 4528 W. Division St. (51)
Cohn, L. A. & Bro., Inc., 5429 W. Roose-
velt Rd. (Cicero) (50)
Consolidated Refining Co., 3241 N. Dayton
St. (13) (silver specialties)
Division Lead Co., 836 W. Kinzie St. (22)
Elesco Smelting Corp., 1144 W. 14th Pl. (8)
Ellis Metal Co., 2031 W. Churchill St. (47)

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STANDARD METAL DIRECTORY

ELEVENTH EDITION

1948

PRICE FIFTEEN DOLLARS

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ATLAS PUBLISHING CO., (Est. 1905)
Publishers — Printers — Distributors
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GEORGIA

ATLANTA

Evans Metal Co., Piedmont Rd.
& Seaboard Airline Rd.
Georgia Lead Co., Bishop &
Mecushin, N. W.

Miller Metals, 73 Mills St., S.W.
Seitzinger's, Thos. F., Sons, 900
Ashby St., N.W. (1)

ILLINOIS

BECKEMEYER

Federated Metals Div. American
Smelting & Refining Co.

CHICAGO

Ace metal Co., 4500 W. Fillmore (24)
American Metal Co. of Ill., Ltd., 1
N. LaSalle (2)
Berkson, I.A., Metal Co., 1500
Wabansia (22)
Berkson, J., & Sons Metal Co., 1446
S. Blue Island Ave. (8)
Braman, Chas., & Sons, Inc., 2046
W. Carroll Ave. (12)
Century Smelting & Refining, 2135
S. Loomis (8)
Chicago Smelting & Refining Corp.,
3701 S. Kedzie Ave. (32)
Cohn, H., & Sons, 4528 W.
Division St. (51)
Cohn, L.A., & Bros., Inc., 5429 W.
Roosevelt Rd. (50)
Division Lead Co., 836 W. Kinzie
St., (22)

Gardiner Metal Co., 4819 S. Campbell
Ave. (32)
Goldsmith Bros., Smelting & Refin-
ing Co., 109 N. Wabash Ave.
Illinois Smelting & Refining Co.,
3752 S. California Ave. (32)
Imperial Smelting Corp., 4442 W.
Fillmore St. (24)
Kester, Solder Co., 4201 Wrightwood
Ave. (39)
Kramer, H., & Co., 21st & Loomis
(8)
Lake Calumet Smelting Co., 119th &
Champlain Ave.
Loewenthal Metals Corp., 947 W.
Cullerton St.
Michigan Smelting & Refining Co.,
400 N. Michigan Ave. (11)
Midland Smelting Co., 1424 N. Hal-
stedt St. (22)
Namco Smelting Corp., 1724 W. Lake
(12)
National Lead Co., 900 W. 18th (8)
Seligman, M., Co., 1949 N. Clay-
bourn Ave. (14)
Silverstein & Pinsof, 1720 N. El-
ston Ave. (22)
Smith & Robinson, 420 Orleans (10)
Standard Metal Co., 4004 S. Went-
worth Ave. (9)
United American Metals Corp. of
Ill., 2246 W. Hubbard St. (12)
Western Metal Co., 3201 S. Kedzie
Ave. (23)

CHICAGO HEIGHTS

Harris, Benj., & Co., 11th & State

ILLINOIS

EAST ST. LOUIS

Lewin Metals Div. Lewin-Mathes Co.
(Monsanto P.O.)

LANSING

Superior Metal Reclaiming Co.

INDIANA

EAST CHICAGO

Eagle Picher Sales Co., (Lead)
Inland Metals Refining Co., 3601
Canal St.
U.S. Reduction Co., Melville &
Chicago Ave.

HAMMOND

Hammond Lead Products Co.
Metals Refining Div. of the Glidden
Co.

INDIANAPOLIS

American Lead Corp., (Sub. of
National Lead Co.), 1600 E. 21st

SOUTH BEND

Schneider, Max Co., 2606 W. Sample
South Bend Smelting & Refining Co.,
1610 Circle Ave.

WHITING

Federal Metals Div. American Smelt-
ing & Refining Co.

IOWA

DAVENPORT

Alter Company, 1701 Rockingham Rd.

KANSAS

KANSAS CITY

Kansas City White Metal Co., 2nd &
Riverview (18)
Sonken-Galamba Corp., 64 N. 2nd (18)

KENTUCKY

NEWPORT

Certified Metals Mfg. Co., Inc.,
534 W. 12th St.

LOUISIANA

BATON ROUGE

Schulkil Products Co.

MARYLAND

BALTIMORE

Industrial Metal Melting Co., 108
E. Barney
Tidewater Smelting & Refining Co.,
9th St.
United American Metals Corp., 1800
Cherry Hill Rd.

MASSACHUSETTS

BOSTON

Acme Smelting Co. of Mass., 413 2nd
St. (Everett)
Atlantic Smelting Co., Inc., 47 S.
Hampton St. (Roxbury)
Butter, Harry & Co., 151 Mt. Vernon,
(Dorchester)
Harcon Corp., 41 Hilton (18)
National Lead Co. of Mass.
U.S. Smelting Refining & Mining Co.,
Inc., 75 Federal St.
Virginia Smelting Co., 131 State

CAMBRIDGE

Cambridge Smelting Co., 100 Pacific

CHELSEA

Gordon, Samuel, & Sons, Inc., 333
3rd (50)
Harcon Corp., 105 5th St.

EVERETT (See Boston)

MALDEN

Richards Co., Inc., 356 Commercial
(48)

MEDFORD

Feinburg, David, Co., 5th (55)

ROXBURY (See Boston)

SOMERVILLE

Bay State Smelting Co., 15A
Bleachery Ct. (43)
Somerville Smelting Co., 14
Chestnut (43)

WEST SPRINGFIELD

New England Smelting Works, Inc.

WORCESTER

Bloomfield, B., & Co., 5 Kansas
(3)

MICHIGAN

BENTON HARBOR

Michigan Standard Alloys, Inc.,
1256 Milton St.

DETROIT

Aetna Smelting & Refining Co.,
1826 Illinois St. (7)
Arco Die Cast & Metal Co., Inc.,
1891 Tromby Ave. (11)
Bohn Aluminum & Brass Corp., Lafay-
ette Bldg. (26)
City Metals Refining Co., 2945
Hubbard (10)

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Smelting and Refining Corporation

Smelters and Refiners

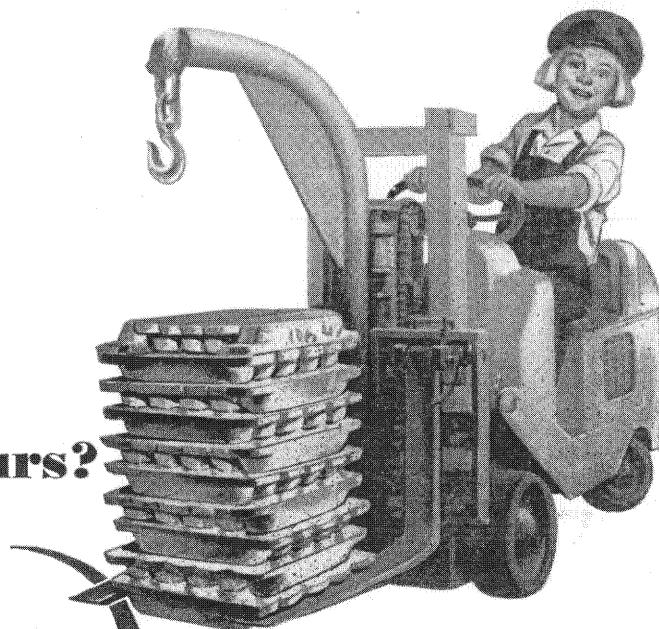
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Coast: Morris P. Kirk & Son, Inc., Los Angeles,
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Salt Lake City, Seattle; Canada: Canada
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1954

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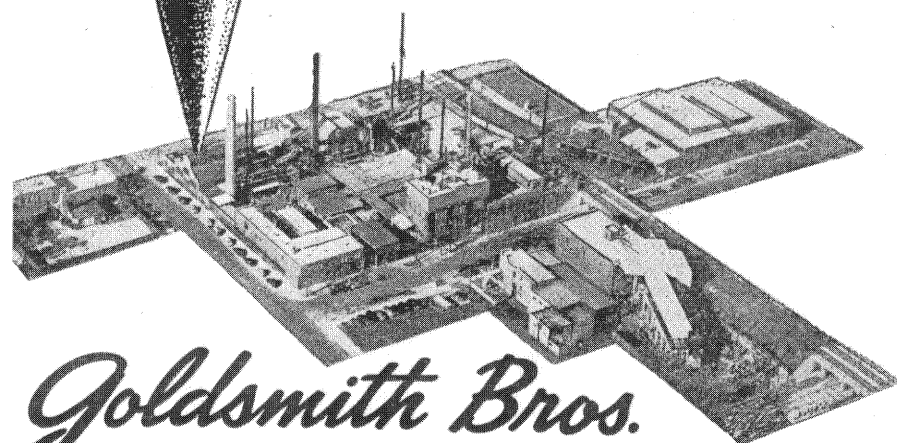
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OAKLAND

Babbitt and Solder Manufacturers

Numerals in brackets () indicate Postal Zone

ALABAMA

BIRMINGHAM

Birmingham Lead & Smelting Co., Pinson Rd.
Bullock, W. J., Inc., 1501 Erie (Mail address,
P. O. Box 539, Fairfield, Ala.)
Federated Metals Div. American Smelting & Re-
fining Co., Brown Marx Bldg.

ARKANSAS

JONESBORO

Arkansas Metals Co., P. O. Box 345

CALIFORNIA

CULVER CITY

Cook Metal Co., 5752 Joanne Pl.

EL SEGUNDO

Kramer, H. & Co., 631 S. Aviation Blvd.

LOS ANGELES

Berg Metals Corp., 2640 Long Beach Ave. (58)
California By-Products Co., 5717 S. District Blvd.
(22)
California Smelting & Refining Co., 1549 N. Fish-
burn Ave. (63)
Eastern Smelting & Refining Co., 2200 E. 11th (2)
Electric Babbitt Metals Co., 739 N. Main (12)
Federated Metals Div. American Smelting & Re-
fining Co., 4010 E. 26th St. (23)
Kirk, Morris P., & Sons, Inc., 2717 S. Indiana (23)
Liberty Metal Co., 2005 Bay (21)
Los Angeles Smelting Co., 739 N. Main St. (12)
United American Metals Corp. of Calif., 2448 E.
25th St. (58)

OAKLAND

Associated Metals Co. of California, 2730 Peralta
(7)
Bercovich, A., Co., 127 Second
Globe Metals Co., 1820 19th (20)
Sunset Smelting & Refining Co., 1639 18th

SAN FRANCISCO

Asher Metal Co., 584 4th
Federated Metals Div. American Smelting & Re-
fining Co., 1901 Army (24)
Finn, John, Metal Works, 384 2nd (7)
Gollan Type Metal Co., 1220 Pennsylvania Ave.
Mars Metal Corp., Foot of Tunnell Ave. (24)
Northwest Lead Co., 444 Market
Rotometals, Inc., 930 Harrison (7)
United American Metals Corp. of California, 785
Bryant St. (7)

TORRANCE

Pacific Smelting Co., 2219 Western Ave.

COLORADO

DENVER

National Smelting & Refining Co., 1351 13th
Peerless Alloy Co., 1445 Osage (4)
Wensley Metal Products Co., 1445 Osage

CONNECTICUT

BRIDGEPORT

Sanford, David C., Co., 39 Drouve

HAMDEN

Hamden Smelting Co., Inc., 39 Edmund St.

NEW HAVEN

Lapides Metal Corp., 322 Legion Ave. (6)

DELAWARE

WILMINGTON

North American Smelting Co., Marine Terminal,
Ft. of Christiana Ave. (99)

DISTRICT OF COLUMBIA

WASHINGTON

Viener, Hyman, & Sons, 120 L St., N. E. (2)

FLORIDA

JACKSONVILLE

Florida Smelting Co., 5800 Buffalo Ave. (6)

GEORGIA

ATLANTA

Evans Metal Co., Piedmont Rd., N. E. & Seaboard
Airline
National Lead Co., Atlanta Branch, 400 Bishop,
N. W.
Seitzinger's, Thos. F., Sons, 900 Ashby St., N. W.
(1)

ILLINOIS

BECKEMEYER

Federated Metals, Div. American Smelting & Re-
fining Co.

CHICAGO

Ablin Bros. Scrap Metals, 3450 S. La Salle
Allen, L. D., Metal Works, 6932 S. Clyde
Allied Metal Co., 1111 W. Liberty St. (8)
Ames Metal Products Co., 1840 W. 33rd (8)
Berkson, L. A., Metal Co., 1590 Wabansia Ave. (22)
Berkson, J., & Sons Metal Co., 2239 S. Union
Ave. (8)
Chicago Smelting & Refining Corp., 3701 S.
Kedzie Ave. (32)
Cohn, H., & Sons, Inc., 4528 W. Division (51)
Cooke, Miller, Yoelin, 2635 W. Taylor St. (12)
Elesco Smelting Corp., 3401 S. Lawndale Ave. (23)
Gardiner Metal Co., 4820 S. Campbell Ave. (32)
Goldsmith Bros. Smelting & Refining Co., 111 N.
Wabash Ave. (2)
Illinois Smelting & Refining Co., 3710 S. California
Ave. (32)
Imperial Smelting Corp., 1031 E. 103rd St.

ILLINOIS

CHICAGO (Cont.)

Imperial Type Metal Co., 1800 S. 54th Ave. (50)
 Inland Metals Refining Co., 651 E. 119th (28)
 Kester Solder Co., 4201 Wrightwood Ave. (39)
 Kramer, H., & Co., 21st & Loomis Sts. (8)
 Lake Calumet Smelting Co., 651 E. 119th St.
 Lavin, R., & Sons, Inc., 3426 S. Kedzie Ave. (23)
 Lincoln Smelting & Refining Co., 5811 W. 66th St. (38)
 Loewenthal Metals Corp., 947 W. Cullerton (8)
 Midland Smelting Co., 1424 N. Halsted St. (22)
 National Lead Co., 900 W. 18th (8)
 National Metal Co., 1724 W. Lake (12)
 North Branch Metal Products, Inc., 1925 N. Mendell (22)
 Pollack, D., & Sons, Inc., 1925 N. Mendell St. (22)
 Suppo Metal & Refining Co., 1240 W. Carroll Ave.
 Seligman, M., Co., 1951 Clybourn Ave. (14)
 Sipi Metals Corp., 1720 N. Elston Ave. (22)
 Smith & Robinson, 1764 W. Highland Ave. (26)
 Suppo Smelting & Refining Co., 1240 W. Carroll Ave.
 United American Metals Corp. of Ill., 2246 W. Hubbard St. (12)
 United Refining & Smelting Corp., 3350 Franklin Blvd. (24)
 Western Metal Co., 3201 S. Kedzie Ave. (23)

CHICAGO HEIGHTS

Harris, Benj., & Co., 11th & State Sts.

EAST ST. LOUIS

Lewin Metals Div., Lewin-Mathes Co. (Monsanto P. O.)
 Shanfeld, E., Metal Products Co., 1530 Converse Ave.

LANSING

Superior Metal Reclaiming Co.

SUMMIT

Division Lead Co.

INDIANA

EAST CHICAGO

Inland Metals Refining Co., 651 E. 119th St.
 Kaplan, Jay., 3601 Canal St.

FORT WAYNE

Wabash Smelting Co., 1509 McKinley Ave.

HAMMOND

Hammond Lead Products Co., Inc., 5231 Hohman Ave.

INDIANAPOLIS

Brodey & Brodey, Inc., 1107 S. Harding (3)
 National Lead Co., American Lead Corp. Branch, 1600 E. 21st

PLYMOUTH

Braman, Chas., & Sons, Inc., P. O. Box 547

SOUTH BEND

Schneider, Max, Co., 2606 W. Sample (19)
 South Bend Smelting & Refining Co., 1610 Circle Ave.

WHITING

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Smelters and Refiners

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and TIN DROSSES**

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Chicago 32, Illinois

Phone: Lafayette 3-3224

KANSAS

KANSAS CITY

Kansas City White Metal Co., 2nd & Riverview (18)
 Sonken-Galamba Corp., 64 N. 2nd (18)

KENTUCKY

LOUISVILLE

Precision Metals Co., 131 N. 10th

NEWPORT

Certified Metals Mfg. Co., 534 W. 12th

LOUISIANA

BATON ROUGE

Dixie Lead Co., P. O. Box 1775

MARYLAND

BALTIMORE

Arundel Chemical Corp., P. O. Box 216
 Dixie Metal Co., 9th St. & Patapsco Ave. (25)
 Hettelman, K., & Sons, Inc., 9th St. & Patapsco Ave. (25)
 Industrial Metal Melting Co., 108 E. Barney
 National Lead Co., 214 W. Henrietta
 Wolfe, Herbert A., Metal Co. (Fairfield)

MASSACHUSETTS

BOSTON

Brackett, Henry F., & Co., Inc., 587 E. 1st (So. Boston)
 Cohen, H., & Co., 41 Bradston (18)
 Coran Bros. Corp., 509 E. Second (So. Boston) (27)
 General Metals & Smelting Co., Inc., 47 Burnham St. (18)
 Harcon Corp., 41 Bradston St. (18)
 Virginia Smelting Co., 131 State

CAMBRIDGE

Cambridge Smelting Co., 100 Pacific St.
 Shawmut Smelting Co., 455 Columbia

CHARLESTOWN

Charlestown Smelting Co., 235 Medford

CHELSEA

Cutter, Oscar, Co., 44-46 Arlington St. (50)
 Harcon Corp., 105 5th St. (50)
 Vulcan Smelting Works, Inc., 115 5th (50)

DORCHESTER

Butter, Harry, & Co., 151 Mt. Vernon St.
 Nick, Herman, & Co., Inc., 140 Granite Ave.

EVERETT

Acme Smelting Co. of Mass., 413 Second (49)

MALDEN

Richards Corporation, 356 Commercial (48)

MEDFORD

REVERE

Acorn Type Foundry, 273 Lee Burbank Hwy

ROXBURY

General Metals & Smelting Co., 47 Burnham

SOMERVILLE

Bay State Smelting Co., 15a Bleachery Ct.
 Somerville Smelting Co., 14 Chestnut St.

WEST SPRINGFIELD

New England Smelting Works, Inc., 502

WORCESTER

Bloomfield, B. & Co., 2 Kansas St. (3)

MICHIGAN

BENTON HARBOR

Michigan Standard Alloys, Inc., 1256 Milt

DETROIT

Acme Metal Co., 1436 Holbrook St.
 Aetna Smelting & Refining Co., 1826 Ithaca
 Arco Die Cast & Metals, Inc., 1891 Tromb (11)
 Bohn Aluminum & Brass Corp., Lafayette Bldg. (26)
 City Metals Refining Co., 2945 Hubbard (1)
 Continental Metal Co., 11500 Russell (11)
 Detroit Lead Pipe Works, Inc., 7001 Lyndo (21)
 Detroit Lead Smelting & Refining, Inc., Helen St.
 Federal Alloys Corp., 2930 Denton St. (1)
 Federated Metals Div. American Smelting Refining Co., 11680 Russell (11)
 Great Lakes Smelting Co., 1640 E. Euclid Ave.
 Hewitt Metals Corp., 1918 Stanley Ave.
 Industrial Smelting Co., 19430 Mt. Elliot
 Larkin Metal Co., 924 Leland
 Michigan Smelting & Refining, Div. Bohn inum & Brass Corp., Lafayette Bldg.
 Standard Metals Co., 1560 Franklin St. (1)
 United Metals Refining Co., 1641 Caniff Ave.
 Wolverine White Metal Co., 3421 Gibbs

MINNESOTA

MINNEAPOLIS

Metals Refining Co., 218 3rd Ave., N.
 National Lead Co., Hampshire Ave. & W.

ST. PAUL

Gopher Smelting & Refining Co., Hwy. 49

MISSOURI

FREDERICKSTOWN

National Lead Co., St. Louis Smelting & Division, P. O. Box 351

KANSAS CITY

Price Metal Refining Co., Guinotte & F Shostak Iron & Metal Co., 303 Broadwa
 Sonken-Galamba Corp., Riverview & Secon
 (See City Kansas)

Table - 1

Table F
X-Ray Fluorescence Analysis of Subsurface Soils

					Metal Concentrations in Parts Per Million													
					Cr	Mn	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Sb	Ba	Hg	Pb
Residential Benchmarks ¹					230	3700	4700	1600	2900	23000	11.3	390	390	78	31	5500	10	400
XRF Reading Number	Reading Date	Reading Time	Location	Approx. Depth in Inches														
2	7/19/2012	10:14:44	XRF1	Surface	< 1126	< 877	< 923	< 502	< 458	< 322	< 124	< 54	< 521	< 528	< 851	< 1598	< 115	< 160
3	7/19/2012	10:15:35	XRF1	3	< 214	< 138	< 109	< 88	< 51	90	< 16	< 9	< 88	< 102	< 173	< 373	< 27	< 23
4	7/19/2012	10:38:14	XRF2	Surface	< 166	388	502	85	154	427	< 29	< 7	< 52	< 68	< 131	< 391	< 17	289
5	7/19/2012	10:40:59	XRF2	3	< 161	161	489	< 77	126	473	< 30	< 6	< 54	< 68	< 133	< 453	< 21	282
6	7/19/2012	10:45:25	XRF2	5	< 153	330	385	< 72	41	202	< 22	< 5	< 53	< 69	< 132	< 398	< 16	160
7	7/19/2012	10:47:54	XRF3	Surface	< 173	420	500	< 81	110	241	< 22	< 7	< 57	< 74	< 141	< 435	< 18	127
8	7/19/2012	10:52:17	XRF3	3	< 161	319	437	< 79	176	437	< 32	< 6	< 52	< 67	< 127	< 424	< 17	354
9	7/19/2012	10:56:09	XRF3	5	< 182	505	445	< 93	241	548	< 34	< 7	< 56	< 73	< 139	533	< 20	373
10	7/19/2012	11:00:57	XRF4	Surface	< 150	258	251	< 69	< 36	69	< 11	< 5	< 52	< 67	< 128	< 409	< 13	18
11	7/19/2012	11:05:58	XRF4	3	195	220	< 223	< 73	58	213	< 22	< 5	< 57	< 74	< 145	< 417	< 17	119

Notes

1

Residential Benchmarks are residential corrective action objectives for soil exposure (lowest of ingestion or inhalation) from Illinois Administrative Code Part 742.

2 NA - Analysis for metal was not conducted

3 <LOD - Metal concentration was below level of detection

4 **2829** - Indicates concentration is above Corrective Action Objective